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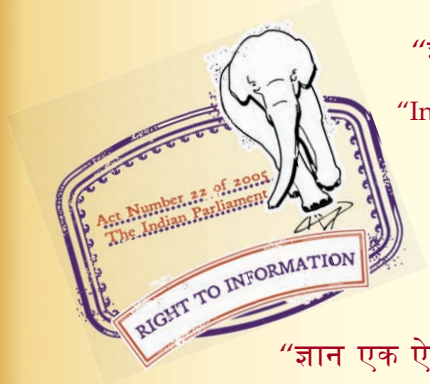

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Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

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Indian Standard

METHODS FOR SAMPLING OF WOOL TOPS

UDC 677·31·071·85 : 677·011 [620·113]

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MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 2

July 1985

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METHODS FOR SAMPLING OF WOOL TOPS

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Indian Standard

METHODS FOR SAMPLING OF WOOL TOPS

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 17 January 1985, after the draft finalized by the Sampling Methods Sectional Committee had been approved by the Textile Division Council.

0.2 Evaluation of quality of wool is very important for the production of woollen goods. While formulating the standard on methods of test for wool fibres, the subcommittee for physical methods of test for wool (TDC 1:2), felt the need for formulating objective procedures for drawing a sample of wool fibres.

0.3 The wool available in the country has been classified into two categories, namely, non-medulated wool and wool tops and medulated wool. Accordingly, two different Indian Standards have been prepared.

0.3.1 The first category of wool is generally imported in the form of wool tops and hence this standard gives the sampling of wool tops.

0.4 In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS : 2-1960*.

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1. SCOPE

1.1 This standard prescribes the methods for sampling of wool tops for determining the physical characteristics of wool fibres.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definitions shall apply.

2.1 Bale — A compressed package of wool in a form convenient for transit.

*Rules for rounding off numerical values (*revised*).

2.2 Wool Top — Continuous sliver of wool fibres without twist from which the shorter fibres or noils have been removed and the fibres brought parallel to each other by combing.

2.3 Consignment — The quantity of wool tops delivered to a buyer against a despatch note.

2.4 Lot of Wool Tops — The quantity of wool tops in a consignment of the same grade and quality.

2.5 Limit of Error of Mean — The maximum difference between the sample mean and its true value (that would be obtained if all the units in the lot were tested) at a given probability level.

3. SAMPLING

3.1 In order to obtain a representative sample from a lot of bales or cases, it is necessary to distribute the sample to be selected over the bales in the lot.

3.1.1 Unless otherwise agreed to between the buyer and the seller, the number of bales or cases to be selected at random from a lot shall be in accordance with Table 1. To ensure randomness of selection of banes, procedures given in IS : 4905-1968* shall be followed.

TABLE 1 NUMBER OF BALES TO BE SELECTED FROM A LOT

No. of Bales in a Lot	No. of Bales to be Selected
(1)	(2)
Up to 25	2
26 to 50	3
51 to 100	5
101 to 300	8
301 and above	13

3.1.2 Five tops shall be selected at random from each of the bales or cases selected according to **4.1.**

3.2 A length of about 5 m of the top shall be removed from each selected top after discarding the end portion. The laboratory sample shall be prepared by following the method prescribed in **3.2.1.**

*Methods for random sampling.

3.2.1 Divide the mass of the sample into roughly 40 zones and take a handful of fibres from each zone. Divide each handful into two parts (taking care to avoid breaking of the fibres), and reject one of the part, choosing the part to be rejected at random. If the fibres are parallel, make the division longitudinally into two parts, that is, in a direction which avoids selection of fibres by their ends. Divide the retained half into two and again reject half at random. Repeat the process until laboratory sample of adequate mass constituted from portions from all 40 zones is obtained.

3.3 The methods for drawing the test specimen for determining each of the characteristics mentioned in **4.2.1** and **4.2.2** from the laboratory sample shall be according to the relevant standard on the methods of test.

4. NUMBER OF TEST SPECIMENS

4.1 The number of test specimens to be drawn for determination of various characteristics of fibres in a lot shall depend upon the accuracy with which the characteristics are to be determined. Table 2 gives the number of fibres to be drawn for characteristics, namely, wood fibre diameter by projection microscope method, fibre length of wool by WIRA fibre diagram method.

TABLE 2 MINIMUM NUMBER OF TESTS FOR TESTING FIBRE DIAMETER AND FIBRE LENGTH

Characteristic	Limit of Error of Mean, Percent					
	2	3	4	5	7	10
Fibre diameter (Projection Microscope method)	600	270	150	100	50	25
Fibre length	—	1 070	600	390	200	100

4.2 Unless otherwise agreed to between the buyer and the seller, 600 fibres for determination of fibre diameter (Projection Microscope method) and fibre length shall be made for all routine testing.

4.2.1 The number of tests for crimp in wool shall be the same as that for fibre length.

4.2.2 The number of tests for the characteristics, namely, wool fibre diameter by air flow method, wool fibre content of raw wool, kemp content of raw wool and moisture in wool shall be three if the lot size is less than 100 bales and/or 1 000 tops and five otherwise.

5. REPORT

5.1 The procedure for reporting the test results shall be according to the relevant standards on the methods of test.

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

Quantity	Unit	Symbol
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	Unit	Symbol
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

Quantity	Unit	Symbol	Definition
Force	newton	N	1 N = 1 kg.m/s^2
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2